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*What is claimed is:*

1. A device with a stator having high performance flat coils comprising:
  - 5 a stator tooth portion being punched by silicon steel pieces and having a tooth face having a cambered surface, an tooth root end extending backwards from a center of the cambered surface; a distal end of the tooth root end being extended outwards with a tooth root distal end which is not larger than a maximum width of the tooth root end;
  - 10 a T shape wire groove seat being made by insulator and having a T shape; a longitudinal vertical post thereof providing to be engaged with the coils of a motor or a generator; an interior of the longitudinal vertical post being hollow and being engagable with the stator tooth root end; and the hollow portion being a hollow end of the wire groove seat; and
  - 15 a flat coil being a flat wire; a thickness of the flat wire being determined by a depth of the longitudinal vertical post of the T shape wire groove seat divided by the number of winds of a rated rotary speed so as to acquire a thickness dividing number; a thickness of the flat wire should be smaller than a thickness dividing number so as to assure that a total thickness of the flat coil after winding is slightly smaller than the depth of the longitudinal vertical post of the T shape wire groove seat; the width of the flat coil being slightly smaller than a width of the winding space of the T shape wire groove seat; the flat wire being used in a standing form and being used with a "winding machine" for winding with a layer or multiple layer of windings; the shaped flat coil being

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further engaged with the longitudinal vertical post of the T shape wire groove seat; and moreover, a distal end of the flat coil being installed with an insulating piece.

2. The device with a stator having high performance flat coils as claimed in claim 1, wherein the stator tooth portion is a single outer stator tooth portion of a motor or a generator.

3. The device with a stator having high performance flat coils as claimed in claim 1, wherein the stator tooth portion is a single inner stator tooth portion of a motor or a generator.

4. The device with a stator having high performance flat coils as claimed in claim 1, wherein the stator tooth portion is an integral closed and inseparable outer stator tooth portion.

5. The device with a stator having high performance flat coils as claimed in claim 1, wherein the stator tooth portion is an integral closed and inseparable inner stator tooth portion.

6. The device with a stator having high performance flat coils as claimed in claim 1, wherein the flat coil is the exciting coil of a motor.

7. The device with a stator having high performance flat coils as claimed in claim 1, wherein the flat coil is the exciting coil of an induced coil in a generator.